

## **8.0 TEST METHOD DATA QUALITY**

### **8.1 Adherence to National and International GLP Guidelines**

Ideally, all data supporting the validity of a test method should be obtained and reported in accordance with GLP guidelines, which are nationally and internationally recognized rules designed to produce high-quality laboratory records. GLPs provide a standardized approach to report and archive laboratory data and records, and information about the test protocol, to ensure the integrity, reliability, and accountability of a study (OECD 1998; U.S. EPA 2003a, 2003b; FDA 2003).

Based on the information provided in the publications, it appears that Gettings et al. (1991, 1994, 1996) and Hagino et al. (1999) conducted the HET-CAM study in compliance with GLP guidelines. It could not be determined, from the publications, whether any of the other HET-CAM studies considered in this BRD were GLP-compliant.

The *in vivo* reference studies used for Balls et al. (1995), Gilleron et al. (1997), and Spielmann et al. (1996) appear to have adhered to GLP guidelines. Balls et al. (1995) and Gilleron et al. (1997) used *in vivo* reference data from the ECETOC Eye Irritation Reference Data Bank (ECETOC 1992). These *in vivo* data were generated in GLP-compliant studies conducted according to OECD TG 405 (OECD 1987). Spielmann et al. (1996) used data obtained from German pharmaceutical and chemical companies. The *in vivo* data used in the evaluation were high-quality data that were carried out according to OECD TG 405 (OECD 1987). Additionally, Spielmann et al. (1996) noted that some chemicals were not used in the evaluation because the *in vivo* studies were not conducted according to GLP guidelines.

The coding procedures used in the studies considered in this BRD were evaluated only by the information provided in the published reports. No attempt was made to obtain original study records to assess these procedures. Based on the available information, the only reports that identified using coded chemicals were Gettings et al. (1991, 1994, 1996), Bagley et al. (1992), Balls et al. (1995), Spielmann et al. (1996), and Hagino et al. (1999).

### **8.2 Data Quality Audits**

Formal assessments of data quality, such as a quality assurance (QA) audit, generally involve a systematic and critical comparison of the data provided in a study report to the laboratory records generated for a study. No attempt was made to formally assess the quality of the *in vitro* HET-CAM data included in this BRD or to obtain information about data quality audits from the authors of the HET-CAM study reports. The published data on the HET-CAM assay were limited to calculated *in vitro* scores and/or irritancy classifications. Data provided in response to two *FR* notices requesting data included average Q-Scores and S-Scores for each testing laboratory involved in a validation study (Balls et al. 1995), individual endpoint scores for each egg for each tested substance (Gilleron et al. 1996, 1997), and IS and ITC values for tested substances (Spielmann et al. 1996). Auditing these reported values would require obtaining the original data for each HET-CAM experiment, which were not obtained.

An informal assessment of the HET-CAM study reports revealed limitations that complicate interpretation of the HET-CAM data:

- *Incomplete substance information:* Some HET-CAM study reports provided limited information about the substances tested. The CASRN, purity, and supplier of the test substances were not consistently reported. Thus, comparisons of data from different studies that evaluated test substances of the same chemical name must be interpreted with caution because of possible differences in substance purity.
- *Data reporting:* A majority of the HET-CAM studies reported only the mean *in vitro* score with no accompanying standard deviation to indicate the variability of the data.
- *Methodology:* The methods were presented in varying levels of detail and completeness in the study reports.

Since the published data were not verified for their accuracy against the original experimental data, and the methods and data were presented in varying levels of detail and completeness, caution must be exercised when interpreting the analyses performed in **Sections 6.0** and **7.0**.

### **8.3 Impact of Deviations from GLP Guidelines**

The impact of deviations from GLP guidelines cannot be evaluated for the HET-CAM studies reviewed in this BRD, since no information on data quality audits was obtained.

### **8.4 Availability of Laboratory Notebooks or Other Records**

As noted in **Section 5.2**, the availability of notebooks or other original records containing data from the reviewed HET-CAM studies was not determined. Therefore, the testing laboratory's summary judgment regarding the outcome of each study cannot be evaluated.

### **8.5 Need for Data Quality**

Data quality is a critical component of the test method validation process. To ensure data quality, ICCVAM recommends that all of the data supporting validation of a test method be available with the detailed protocol under which the data were produced. Original data should be available for examination, as should supporting documentation, such as laboratory notebooks. Ideally, the data should adhere to national or international GLP guidelines (ICCVAM 2003).